

IN THE CLAIMS:

Kindly amend claims 1 and 19 and add new claims 41-44 as shown in the following listing of claims, which replaces all previous listings and versions of claims in this application.

1. (currently amended) A near-field optical head,
comprising:

a slider supported by a suspension arm providing a load weight and obtaining a floating force due to a relative motion of the slider with respect to a recording medium so that a gap is produced between a bottom surface of the slider and a surface of the recording medium due to a balance between the load weight and the floating force; and

a probe comprising a microscopic aperture formed in the bottom surface of the slider for producing a near-field light or converting a near-field light produced on a surface of the recording medium into a propagation light without a lens being disposed proximate the microscopic aperture for producing or converting the near-field light;

wherein the recording medium and the probe interact through the near-field light when the slider is caused to undergo scanning movement relative to a surface of the recording medium to thereby effect at least one of the

recording of information onto the recording medium and the reproducing of information stored on the recording medium; and

wherein the probe protrudes from the bottom surface of the slider toward the recording medium so that a distance between the microscopic aperture probe and the recording medium is smaller than a distance between a part of the bottom surface of the slider closest to the recording medium and the recording medium so that the probe can be brought to within several nanometers to several tens of nanometers close to the recording medium to enable high resolution optical reading and/or recording of data on the recording medium.

2. - 18. (canceled).

19. (currently amended) A near-field optical head comprising: a support member mounted to undergo relative movement with respect to a sample; and a probe protruding from a bottom surface of the support member and having a microscopic aperture formed therein for producing a near-field light or converting a near-field light produced at a surface of the sample into a propagation light without a lens being disposed proximate the microscopic aperture for producing or converting the near-field light; wherein the sample and the probe interact through the near-field light when the support member undergoes relative movement with respect to the surface

of the sample; and wherein a part of the bottom surface of the support member closest to the sample is more distant from the sample than the microscopic aperture probe so that the microscopic aperture probe can be brought to within several nanometers to several tens of nanometers close to the sample.

20. (previously presented) A near-field optical head according to claim 19; wherein the support member comprises a slider supported by a suspension arm for providing a load weight and producing a floating force in response to relative motion thereof with respect to the sample so that a gap is formed between the probe and the sample due to a balance between the load weight and the floating force.

21. - 31. (canceled).

32. (previously presented) A near-field optical head according to claim 19; wherein the probe comprises a tapered projection mounted to the support member and having a sharpened tip protruding from the bottom surface of the support member.

33. (previously presented) A near-field optical head according to claim 1; further comprising a through-hole formed in the slider and terminating in the microscopic aperture.

34. (previously presented) A near-field optical head according to claim 33; further comprising a light shielding layer covering the through-hole except for the microscopic aperture.

35. (previously presented) A near-field optical head according to claim 34; further comprising a light source disposed on a top surface of the slider above the through-hole so that a light path is defined by the light source, the through-hole, and the microscopic aperture.

36. (previously presented) A near-field optical head according to claim 1; further comprising a through-hole formed in the slider and terminating in the microscopic aperture; a light shielding layer covering the through-hole except for the microscopic aperture; and a light source mounted on a top surface of the slider above the through hole, so that a light path is defined by the light source, the through-hole, and the microscopic aperture.

37. (previously presented) A near-field optical head according to claim 19; further comprising a through-hole formed in the support member and terminating in the microscopic aperture.

38. (previously presented) A near-field optical head according to claim 37; further comprising a light shielding layer covering the through-hole except for the microscopic aperture.

39. (previously presented) A near-field optical head according to claim 38; further comprising a light source disposed on a top surface of the support member above the through hole so that a light path is defined by the light source, the through-hole, and the microscopic aperture.

40. (previously presented) A near-field optical head according to claim 19; further comprising a through-hole formed in the support member and terminating in the microscopic aperture; a light shielding layer covering the through-hole except for the microscopic aperture; and a light source disposed on a top surface of the support member above the through hole, so that a light path is defined by the light source, the through-hole, and the microscopic aperture.

41. (new) A near-field optical head according to claim 1; further comprising a through-hole formed in a reduced thickness portion of the slider and terminating in the microscopic aperture; and a light source mounted on a top surface of the reduced thickness portion of the slider above the through hole, so that a light path is defined by the light source, the through-hole, and the microscopic aperture.

42. (new) A near-field optical head according to claim 41; further comprising a light shielding layer covering the through-hole except for the microscopic aperture.

43. (new) A near-field optical head according to claim 19; further comprising a through-hole formed in a reduced thickness portion of the support member and terminating in the microscopic aperture; and a light source disposed on a top surface of the reduced thickness portion of the support member above the through hole, so that a light path is defined by the light source, the through-hole, and the microscopic aperture.

44. (new) A near-field optical head according to claim 43; further comprising a light shielding layer covering the through-hole except for the microscopic aperture.